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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,641	01/16/2004	Han-Ming Wu	42P10058D	1204

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Brent E. Vecchia
Blakely, Sokoloff, Taylor & Zafman LLP
7th Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025

EXAMINER

NGUYEN, HUNG

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,641

Applicant(s)

WU ET AL.

Examiner

Hung Henry V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-37 and 39-43 is/are rejected.
- 7) ☒ Claim(s) 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1/16/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 31-35, 40-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Shirasaki (U.S.Pat. 6,593,034).

With respect to claims 31 and 40-43, Shirasaki discloses an apparatus and corresponding method comprising all basic features of the instant claims such as: adding a first gas/inert gas to an enclosure (10) filled with a second gas/air through a vent (6), the first gas/inert gas having a different gas composition than the second gas/air (see col.4, lines 58-64), and the enclosure (10) being between a mask protective device (1), a patterned mask (5) and a wall (2) connecting the mask protective device with the pattern mask and removing the second gas from the enclosure through the vent (see col. 3, lines 58-67).

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As to claims 32-35, and 40, Shirasaki further teaches the step of adding the first gas comprises adding the first gas through air inlet opening of the vent by pressure, and wherein removing the second gas comprises removing the second gas through an outlet opening of the vent by pressure (see col.3, lines 65-67 and figure 2 and col.4, lines 48-51) and the discharge gas coming out of the opening was analyzed for the content of oxygen after 30 minutes of nitrogen gas introduction to fail to detect more than a trace concentration of oxygen in the discharged gas indicating that the space surrounded by the photomask and the framed particle was filled with substantially pure nitrogen gas (see col.8, lines 34-42) and wherein the first gas/inert gas has a higher transmissivity for the photography radiation than the second gas/air. Shirasaki suggests step of adding the first gas comprises adding the first gas through at least two openings of the vent and step of removing includes removing the second quantity of the second gas through at least two openings (see col.10-22).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirasaki (U.S.Pat. 6,593,034) in view of Shimada (U.S.Pat. 5,735,961).

With respect to claims 36-37, Shirasaki discloses a method comprising substantially all of the limitations of the instant claims as discussed above. Shirasaki does not expressly disclose

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adding the first gas to the enclosure by diffusion and removing the second gas from the enclosure by diffusion. However, suitable gas supply system and purge gas system using pressure, diffusion or vacuum, are well known in the art. For example, Shimada teaches a semiconductor fabricating apparatus where the inert gas is supplied to a chamber by diffusion fashion (see col.2, lines 13-16). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Shimada and Shirasaki to obtain the invention as specified in claims 36-37 of the instant application. It would have been obvious to a skilled artisan to add and remove the first gas and second from the enclosure of Shirasaki by using diffusion fashion as suggested by Shimada for at least the purpose of effectively eliminating distortion of either the mask or mask protective device due to pressure changes.

5. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirasaki (U.S.Pat. 6,593,034).

As to claim 39, Shirasaki disclose a method comprising substantially all basic steps of the instant claim as discussed above. Shirasaki does not expressly disclose reducing the total pressure inside the enclosure to below 500 mm of mercury. Since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). It would have been obvious to one having ordinary skill in the art at the time the invention was made to maintain the total pressure inside the enclosure of Shirasaki at desired level such as below 500 mm of mercury for at least the purpose of eliminating distortion of either the mask or mask protective device due to high pressure.

Allowable Subject Matter

6. Claim 38 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record either alone or in combination, neither discloses nor makes obvious the combination of a method comprising, among other features, transmitting radiation having a different wavelength than a wavelength of a photolithography radiation through the enclosure to increase a diffusion coefficient of a molecule in the enclosure, as recited in the instant claim.

Prior Art Made of Record

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ivaldi (U.S.Pat. 6,507,390) discloses a method for maintaining a purged optical gap between a pellicle and mask in a photolithography system where a gas supply system is provided to infuse a purge gas into the gap.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V. Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hvn
3/5/05



HENRY HUNG NGUYEN
PRIMARY EXAMINER